

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
30 September 2004 (30.09.2004)

PCT

(10) International Publication Number
WO 2004/082898 A3

(51) International Patent Classification⁷: **B25J 17/02**

(21) International Application Number:
PCT/SE2004/001040

(22) International Filing Date: 24 June 2004 (24.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03076990.5 26 June 2003 (26.06.2003) EP

(71) Applicant (for all designated States except US): **ABB AB**
[SE/SE]; S-721 83 Västerås (SE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **KROGEDAL, Arnulf**
[NO/NO]; Jaerv. 295, N-4322 sandnes (NO).

(74) Agent: **ABB AB**; Legal & Compliance/Intellectual Prop-
erty, Forskargränd 8, S-721 78 Västerås (SE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

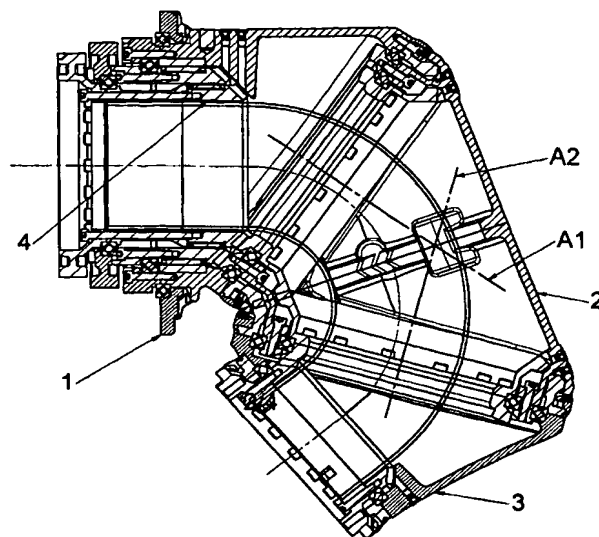
Published:

- with international search report
- upon request of the applicant, before the expiration of the
time limit referred to in Article 21(2)(a)

(88) Date of publication of the international search report:
20 January 2005

[Continued on next page]

(54) Title: A ROBOT WRIST WITH GEAR MEMBERS ARRANGED AS CONCAVE BEVEL GEAR WITH A NEGATIVE BEVEL ANGLE



(57) Abstract: A robot wrist with a plurality of rotatable parts arranged in series with each other arranged to be mounted on a robot arm or automation machine to enable rotary movement of the first wrist part about a first axis, and a second wrist part 2 journaled in the first wrist part. Each wrist part 1, 2, may be arranged with one or more gear members to drive a rotary movement and rotate any wrist part relative to another wrist part, and at least one gear member of one engaging pair is a concave bevel gear arranged with negative bevel angle (Cn) to the plane of rotation (P) at the engaging face. In another embodiment the robot wrist has three wrist parts 1, 2, 3. The robot wrist may also comprise an inner protection hose.

WO 2004/082898 A3



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.